Dive Plan 4204 - 28 June 2006

Port: D. Fornari ***Starboard:*** K. Rubin ***Pilot:*** M. Spear

On Bottom Target: x = 3664 y = 82977 9˚53.0162N 104˚18.000W
d = 2540m

Objectives: Characterize 9°53'N on axis 'hot spot' observed in NH camera and CTD tows; transit to east to fissure eruption and then north along it, and over to ponded area against scarp.

1. Turn on ECHEM at 200m, leave on as descend to bottom, positioned in its holster.
2. Turn on magnetometer at 1000m and do a 3 min spin clockwise and then counterclockwise, note time of spin.
3. Land on bottom to west of ASCT.
   - have the surface survey you in at your position
   - turn on cameras including downlooking with booms (fly 4-5m up)
   - pick up a piece of 2006 flow at the landing site (or as soon as you encounter it)
   - deploy a marker at the sample site.
4. Transit ~200 m E to the ASCT, cross as slowly as possible to the east wall with IMAGENIX on to get ASCT crossing profile, then drive N in ASCT until you find the area of 'white' venting observed in the New Horizon photos.
5. If you find an area of high temperature flow (i.e., black smoker)
   - collect sulfide and place in biobox
   - measure T with hi T probe
   - 1 majors pair
   - 2 gas tights
   - pick up basalt (if covered with bio-material place in biobox
   - deploy marker (VERY IMPORTANT).
6. If there is an area of vigorous diffuse flow:
   - measure its T with hi or lo T probe to find the 'hottest' place
   - ECHEM to determine placement of following
   - collect 1 majors pair
   - collect 1 gas tight
   - deploy setting experiments as follows:
     - [4 'TAMS' and 2 'rounds'] in >20°C flow
     - ECHEM on center of each TAM and round
     - 4 TAMS in ambient (non-venting) spot (move slightly?)
     - ECHEM on center mesh of each ambient TAM
   - slurp early settlers off rock surface (amphipods too if present, but lower priority than other fauna)
   - pick-up basalt with early settlers and place in grey biobox
   - deploy marker(s)
7. If a snowblower is found, this is also an option for the diffuse flow sampling site.
8. If a snowblower is found:
   - filter slurp snowblower material

   (watch meter voltage carefully - on 4203 filter was nowhere near full after 6min).
9. An additional majors pair and gas tight can be tripped at a second black smoker or site of diffuse flow. Follow protocol in #5 or # 6 above as appropriate.

10. Transit east out of the ASCT for ~700m to the location of the fissure eruption
    - pick up basalt samples as appropriate along the transect.
11. Once you reach the location of the fissure eruption
    - collect basalt
    - photodocument
    - if white material or shimmering water is present use T probe and ECHEM
    - deploy marker(s).
12. Travel north along the fissure eruption sampling as needed, following protocol in #11.

13. Travel east to inward facing scarp along which the flow has ponded at x-y of camera tow crossing.

14. If you have a pair left, collect it at the end in an area away from all venting for a background seawater sample. ***(Just a majors, NOT a gas tight.)***

Basket load:

2 marker launchers with 14 markers
downlooking camera
ECHEM probe and can
Alvin hi T probe
Alvin lo T probe
slurp-filter
slurp-carboy
2 grey bioboxes
1 white square biobox
1 clear square biobox
2 rounds
8 TAMS
2 scoops
3 majors pairs
4 gas tights
1 gas tight

ECHEM laptop and power cord/charger in ball.

Origin is 9˚08'N and 104˚20'W.